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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT	PAPER NUMBER
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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/072,286

Applicant(s)

MURPHY, CHARLES DOUGLAS

Examiner

LUONG T. NGUYEN

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-14, 17-20 and 26-30 is/are rejected.
- 7) ☒ Claim(s) 5-9, 15, 16, 21-25, 31 and 32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/11/02</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 1-32 are objected to because of the following informalities:

Claim 1 (at the end of lines 7, 9, 11, 15 and 17), claim 4 (at the end of lines 2, 4), claim 5 (at the end of lines 3, 5, 7), claim 6 (at the end of lines 3, 5, 8), claim 8 (at the end of lines 3, 5), claim 9 (at the end of lines 3, 4, 8, 12), claim 10 (at the end of lines 2, 4), claim 11 (at the end of lines 2, 4), claim 13 (at the end of lines 3, 8), claim 14 (at the end of lines 3, 6, 11, 13), claim 16 (at the end of lines 4, 6), claim 17 (at the end of 10, 12, 14, 17, 19), claim 20 (at the end of lines 2, 4), claim 21 (at the end of 3, 5, 7), claim 22 (at the end of lines 3, 5), claim 24 (at the end of lines 3, 5), claim 25 (at the end of lines 3, 4, 8, 12), claim 29 (at the end of lines 4, 7, 8), claim 30 (at the end of lines 4, 8, 9), claim 32 (at the end of lines 3, 5), “;” should be inserted.

Claim 6 (line 8), “said composite image” should be changed --said composite digital image--.

Claim 22 (line 2), “evaluation” should be changed to --evaluation--.

Claims 2-16 are objected as being dependent on claim 1.

Claims 18-32 are objected as being dependent on claim 17.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11, 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 (line 3) recites limitation “**arithmetic means** for combining digital images from said second set...” It is unclear since claim 1 (line 12) already recited limitation “**arithmetic means** for combining said digital images from said first set...” It is not known the limitation “arithmetic means” in claim 1 and claim 11 are the same or different.

Claim 27 (lines 1-2) recites limitation “**arithmetic combining** of digital images from a second set...” It is unclear since claim 17 (line 2) already recited limitation “**arithmetic combination** of digital images from a first set...” It is not known the limitation “arithmetic” in claim 17 and claim 27 are the same or different.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 10, 12-14, 17-20, 26, 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann (US 5,828,793) in view of Tian et al. (US 6,498,576).

Regarding claim 1, Mann et al. disclose a machine used for exposure adjustment in digital imaging, comprising:

a first set of digital images of a field of view (source image S1, S2, S3, figures 7A-7B, column 10, line 58 – column 11, line 40), said first set comprising at least two different digital images, with a first digital image (image S1, figure 7B) and a second digital image in said first set comprising a third pixel and a fourth pixel (image S3, figure 7B);

arithmetic means for combining said digital images in said first set to produce a composite digital image of said field of view (image S1 and S3 are combined to get target image T, figure 7B, column 10, line 58 – column 11, line 40), with

i. said composite digital image having a first composite pixel having a first composite exposure time (included in target image T, figure 7B);

ii. said composite digital image having a second composite pixel having a second composite exposure time (included in target image T, figure 7B);

whereby said composite digital image can have desired exposure properties that differ from the exposure properties of the digital images from which it is formed (the target image T has exposure properties differ from the exposure properties of images S1 and S3, figure 7B).

Mann fails to specifically disclose a first digital image in said first set comprising a first pixel, said first pixel having a first exposure time and said first pixel comprising a first digital number value that represents signal levels of a sensor that responds to visible light, and said first digital image in said first set comprising a second pixel, said second pixel having a second exposure time. However, Tian et al. teaches four pixels have different exposure times of T , $2T$, $4T$, $8T$ for a frame (a digital image), figure 3; column 3, line 60 – column 4, line 50; column 5, line 18 – column 6, line 7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Mann by the teaching

of Tian et al. in order to allow the sets of data from various exposure times to be combined properly (column 5, lines 30-35).

Regarding claim 2, Mann discloses said third pixel and said fourth pixel contribute to said first composite pixel, whereby pixels from the same digital image in said first set can contribute to a single pixel in said composite digital image (figure 7B).

Regarding claim 3, Mann discloses said second pixel and said third pixel contribute to said first composite pixel, whereby pixels from different digital images in said first set can contribute to a single pixel in said composite digital image (figure 7B).

Regarding claim 4, Mann discloses said second pixel contributes to said first composite pixel and said first composite exposure time is not identical to said second exposure time whereby said first composite exposure time is not the same as the exposure times of which it is composed, with possible differences including length, beginning times, and ending times (figure 7B).

Regarding claim 10, Mann discloses a mobile electric power supply (inherently disclosed in image source 202 (e.g., a still video camera or scanner, figure 8, column 11, lines 40-67)); means for powering said arithmetic means for combining with said mobile electric power supply whereby said machine of claim 1 can be powered by a device such as a battery, a fuel cell, a solar panel (inherently disclosed in image source 202 (e.g., a still video camera or scanner, figure

8, column 11, lines 40-67)), or a generator so that said machine of claim 1 can be moved from place to place and used without a wire-line connection to a non-mobile electric power supply.

Regarding claim 12, Mann discloses means for acquiring digital images, whereby said machine of claim 1 can be part of a digital imaging apparatus such as a digital camera for taking still images (image source 202 such as a still video camera, figure 8, column 11, lines 40-67);

Regarding claims 13, 14, Mann discloses a sensor, means for exposing said sensor to incident energy, means for representing the response of said sensor and means for converting said net signal level to a digital number (all these features are included in the image source 202 such as a still video camera, figure 8, column 11, lines 40-55).

Claims 17-20, 26, 28-30 are method claims of apparatus claims 1-4, 10, 12-14, respectively; therefore, see Examiner's comment regarding claims 1-4, 10, 12-14.

6. Claims 5-9, 15-16, 21-25, 31-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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Art Unit: 2622

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
12/25/07



LUONG T. NGUYEN
PATENT EXAMINER